

SEQUENCE LISTING



110> Fisher, Joseph
Lorens, James
Payan, Donald
Rossi, Alexander

<120> Multiparameter Facs Assays to Detect Alterations in
Cellular Parameters and to Screen Small Molecule
Libraries

<130> A68104/DJB/RMS/DAV

<140> 09/293,670

<141> 1999-04-16

<160> 57

<170> PatentIn Ver. 2.0

<210> 1

<211> 27

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<400> 1

Lys Arg Arg Gln Thr Ser Met Thr Ser Met Thr Asp Phe Tyr His Ser
1 5 10 15

Lys Arg Arg Leu Ile Phe Ser Lys Arg Lys Pro
20 25

<210> 2

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<400> 2

Lys Arg Arg Gln Thr Ser Ala Thr Ser Met Ala Ala Phe Tyr His Ser
1 5 10 15

Lys Arg Arg Leu Ile Phe Ser Lys Arg Lys Pro

20

25

<210> 3

<211> 9

<212> PRT

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<220>

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<400> 3

Arg Thr Val Leu Gly Val Ile Gly Asp

1

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<211> 9

<212> PRT

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<223> Description of Artificial Sequence: synthetic

<400> 4

Arg Thr Ala Leu Gly Asp Ile Gly Asn

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<210> 5

<211> 27

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<213> Rat

<400> 5

Tyr Met Thr Val Ser Ile Ile Asp Arg Phe Met Gln Asp Ser Cys Val

1

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10

15

Pro Lys Lys Met Leu Gln Leu Val Gly Val Thr

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<210> 6

<211> 28

<212> PRT

<213> Mouse

<400> 6
Lys Phe Arg Leu Leu Gln Glu Thr Met Tyr Met Thr Val Ser Ile Ile
1 5 10 15

Asp Arg Phe Met Gln Asn Ser Cys Val Pro Lys Lys
20 25

<210> 7
<211> 27
<212> PRT
<213> Mouse

RJ
<400> 7
Arg Ala Ile Leu Ile Asp Trp Leu Ile Gln Val Gln Met Lys Phe Arg
1 5 10 15

Leu Leu Gln Glu Thr Met Tyr Met Thr Val Ser
20 25

<210> 8
<211> 27
<212> PRT
<213> Mouse

<400> 8
Asp Arg Phe Leu Gln Ala Gln Leu Val Cys Arg Lys Lys Leu Gln Val
1 5 10 15

Val Gly Ile Thr Ala Leu Leu Leu Ala Ser Lys
20 25

<210> 9
<211> 18
<212> PRT
<213> Mouse

<400> 9
Met Ser Val Leu Arg Gly Lys Leu Gln Leu Val Gly Thr Ala Ala Met
1 5 10 15

Leu Leu

<210> 10

<211> 61
<212> PRT
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<300>
<303> EMBO J.
<304> 13
<305> 22
<306> 5303-5309
<307> 1994

<400> 10

Met Gly Cys Ala Ala Leu Glu Ser Glu Val Ser Ala Leu Glu Ser Glu
1 5 10 15

Val Ala Ser Leu Glu Ser Glu Val Ala Ala Leu Gly Arg Gly Asp Met
20 25 30

Pro Leu Ala Ala Val Lys Ser Lys Leu Ser Ala Val Lys Ser Lys Leu
35 40 45

Ala Ser Val Lys Ser Lys Leu Ala Ala Cys Gly Pro Pro
50 55 60

<210> 11
<211> 6
<212> PRT
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<400> 11
Gly Arg Gly Asp Met Pro
1 5

<210> 12
<211> 69
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

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<400> 12

Met Gly Arg Asn Ser Gln Ala Thr Ser Phe Gly Thr Phe Ser His Phe
1 5 10 15

Tyr Met Glu Trp Val Arg Gly Gly Glu Tyr Ile Ala Ala Ser Arg His
20 25 30

Lys His Asn Lys Tyr Thr Thr Glu Tyr Ser Ala Ser Val Lys Gly Arg
35 40 45

Tyr Ile Val Ser Arg Asp Thr Ser Gln Ser Ile Leu Tyr Leu Gln Lys
50 55 60

Lys Lys Gly Pro Pro
65

<210> 13

<211> 7

<212> PRT

<213> Monkey virus

<300>

<301> Kalderon et al.,

<303> Cell

<304> 39

<306> 499-509

<307> 1984

<400> 13

Pro Lys Lys Lys Arg Lys Val
1 5

<210> 14

<211> 6

<212> PRT

<213> Homo sapiens

<400> 14

Ala Arg Arg Arg Arg Pro
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<210> 15

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

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<300>

<301> Ghosh et al.,
<303> Cell
<304> 62
<306> 1019-
<307> 1990

<400> 15

Glu Glu Val Gln Arg Lys Arg Gln Lys Leu
1 5 10

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<210> 16

<211> 9
<212> PRT
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<220>

<223> Description of Artificial Sequence: synthetic

<300>

<301> Nolan et al.,
<303> Cell
<304> 64
<305> 961
<307> 1991

<400> 16

Glu Glu Lys Arg Lys Arg Thr Tyr Glu
1 5

<210> 17

<211> 20

<212> PRT
<213> African clawed toad

<300>

<301> Dingwell et al.,
<303> Cell
<304> 30
<306> 449-458
<307> 1982

<300>
<301> Dingwell et al.,
<303> J. Cell Biol.
<304> 107
<306> 641-849
<307> 1988

<400> 17
Ala Val Lys Arg Pro Ala Ala Thr Lys Lys Ala Gly Gln Ala Lys Lys
1 5 10 15
Lys Lys Leu Asp
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Al
<210> 18
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<300>
<301> Nakauchi et al.,
<303> Proc. Natl. Acad. Sci. U.S.A.
<304> 82
<306> 5126-
<307> 1985

<400> 18
Met Ala Ser Pro Leu Thr Arg Phe Leu Ser Leu Asn Leu Leu Leu Leu
1 5 10 15
Gly Glu Ser Ile Leu Gly Ser Gly Glu Ala Lys Pro Gln Ala Pro
20 25 30

<210> 19
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<300>

<301> Staunton et al.,

<303> Nature

<304> 339

<306> 61-

<307> 1989

<400> 19

Met Ser Ser Phe Gly Tyr Arg Thr Leu Thr Val Ala Leu Phe Thr Ile
1 5 10 15

Leu Ile Cys Cys Pro Gly

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<210> 20

<211> 51

<212> PRT

<213> Artificial Sequence

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<220>

<223> Description of Artificial Sequence: synthetic

<300>

<301> Nakauchi et al.,

<303> Proc. Natl. Acad. Sci. U.S.A.

<304> 82

<306> 5126-

<307> 1985

<400> 20

Pro Gln Arg Pro Glu Asp Cys Arg Pro Arg Gly Ser Val Lys Gly Thr
1 5 10 15

Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly
20 25 30

Ile Cys Val Ala Leu Leu Ser Leu Ile Ile Thr Leu Ile Cys Tyr
35 40 45

His Ser Arg

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<210> 21

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<300>

<301> Staunton et al.,

<303> Nature

<304> 339

<306> 61-

<307> 1989

<400> 21

Met Val Ile Ile Val Thr Val Val Ser Val Leu Leu Ser Leu Phe Val
1 5 10 15

Thr Ser Val Leu Leu Cys Phe Ile Phe Gly Gln His Leu Arg Gln Gln
20 25 30

Arg

<210> 22

<211> 37

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<300>

<301> Homans et al.,

<303> Nature

<304> 333

<305> 6170

<306> 269-272

<307> 1988

<300>

<303> J. Biol. Chem.

<304> 266

<306> 1250-

<307> 1991

<400> 22

Pro Asn Lys Gly Ser Gly Thr Thr Ser Gly Thr Thr Arg Leu Leu Ser
1 5 10 15

Gly His Thr Cys Phe Thr Leu Thr Gly Leu Leu Gly Thr Leu Val Thr

20

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30

Met Gly Leu Leu Thr

35

A,
<210> 23

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<300>

<303> Mol. Cell. Biol.

<304> 4

<305> 9

<306> 1834-

<307> 1984

<300>

<303> Science

<304> 262

<306> 1019-1024

<307> 1993

<400> 23

Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro Ser Gln Arg

1

5

10

<210> 24

<211> 26

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic

<300>

<303> J. Biol. Chem.

<304> 269

<306> 27791-

<307> 1994

<400> 24

Leu Leu Gln Arg Leu Phe Ser Arg Gln Asp Cys Cys Gly Asn Cys Ser

1

5

10

15

Asp Ser Glu Glu Glu Leu Pro Thr Arg Leu
20 25

A
<210> 25
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<212> PRT
<213> Artificial Sequence

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<300>
<303> J. Mol. Neurosci.
<304> 5
<305> 3
<306> 207-
<307> 1994

<400> 25
Lys Gln Phe Arg Asn Cys Met Leu Thr Ser Leu Cys Cys Gly Lys Asn
1 5 10 15

Pro Leu Gly Asp
20

<210> 26
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
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<300>
<303> Nature
<304> 302
<306> 33-
<307> 1983

<400> 26
Leu Asn Pro Pro Asp Glu Ser Gly Pro Gly Cys Met Ser Cys Lys Cys
1 5 10 15

Val Leu Ser

A
<210> 27
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<300>
<303> Ann. N. Y. Acad. Sci.
<304> 674
<306> 58-
<307> 1992

<400> 27
Lys Phe Glu Arg Gln
1 5

<210> 28
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<300>
<303> Cell. Mol. Biol. Res.
<304> 41
<306> 405-
<307> 1995

<400> 28
Met Leu Ile Pro Ile Ala Gly Phe Phe Ala Leu Ala Gly Leu Val Leu
1 5 10 15

Ile Val Leu Ile Ala Tyr Leu Ile Gly Arg Lys Arg Ser His Ala Gly
20 25 30

Tyr Gln Thr Ile
35

<210> 29

<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<300>
<303> Biochem. Biophys. Res. Commun.
<304> 205
<306> 1-5
<307> 1994

<400> 29
Leu Val Pro Ile Ala Val Gly Ala Ala Leu Ala Gly Val Leu Ile Leu
1 5 10 15

Val Leu Leu Ala Tyr Phe Ile Gly Leu Lys His His His Ala Gly Tyr
20 25 30

Glu Gln Phe
35

<210> 30
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<300>
<303> Eur. J. Biochem.
<304> 165
<306> 1-6
<307> 1987

<400> 30
Met Leu Arg Thr Ser Ser Leu Phe Thr Arg Arg Val Gln Pro Ser Leu
1 5 10 15

Phe Ser Arg Asn Ile Leu Arg Leu Gln Ser Thr
20 25

<210> 31
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<212> PRT
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<220>

<223> Description of Artificial Sequence: synthetic

<300>

<303> Eur. J. Biochem.

<304> 165

<306> 1-6

<307> 1987

<400> 31

Met Leu Ser Leu Arg Gln Ser Ile Arg Phe Phe Lys Pro Ala Thr Arg
1 5 10 15

Thr Leu Cys Ser Ser Arg Tyr Leu Leu

20 25

a/

<210> 32
<211> 64
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<300>

<303> Eur. J. Biochem.

<304> 165

<306> 1-6

<307> 1987

<400> 32

Met Phe Ser Met Leu Ser Lys Arg Trp Ala Gln Arg Thr Leu Ser Lys
1 5 10 15

Ser Phe Tyr Ser Thr Ala Thr Gly Ala Ala Ser Lys Ser Gly Lys Leu
20 25 30

Thr Gln Lys Leu Val Thr Ala Gly Val Ala Ala Ala Gly Ile Thr Ala
35 40 45

Ser Thr Leu Leu Tyr Ala Asp Ser Leu Thr Ala Glu Ala Met Thr Ala
50 55 60

<210> 33
<211> 41
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<300>
<303> Eur. J. Biochem.
<304> 165
<306> 1-6
<307> 1987

A
<400> 33
Met Lys Ser Phe Ile Thr Arg Asn Lys Thr Ala Ile Leu Ala Thr Val
1 5 10 15

Ala Ala Thr Gly Thr Ala Ile Gly Ala Tyr Tyr Tyr Tyr Asn Gln Leu
20 25 30

Gln Gln Gln Gln Arg Gly Lys Lys
35 40

<210> 34
<211> 4
<212> PRT
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<223> Description of Artificial Sequence: synthetic

<300>
<303> Royal Society London Transaction B
<306> 1-10
<307> 19992

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Lys Asp Glu Leu
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<212> PRT
<213> adenovirus

<300>
<303> EMBO J.
<304> 9
<306> 3153-
<307> 1990

<400> 35
Leu Tyr Leu Ser Arg Arg Ser Phe Ile Asp Glu Lys Lys Met Pro
1 5 10 15

A
<210> 36
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<300>
<303> Nature
<304> 302
<306> 33-
<307> 1983

<400> 36
Leu Asn Pro Pro Asp Glu Ser Gly Pro Gly Cys Met Ser Cys Lys Cys
1 5 10 15

Val Leu Ser

<210> 37
<211> 15
<212> PRT
<213> Artificial Sequence

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<300>
<303> Proc. Natl. Acad. Sci. U.S.A.
<304> 91
<306> 11963-

<307> 1994

<400> 37

Leu Thr Glu Pro Thr Gln Pro Thr Arg Asn Gln Cys Cys Ser Asn
1 5 10 15

<210> 38

<211> 9

<212> PRT

<213> Artificial Sequence

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<303> EMBO J.

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<306> 13053-

A/
<307> 1996

<400> 38

Arg Thr Ala Leu Gly Asp Ile Gly Asn
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<210> 39

<211> 29

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic

<300>

<303> Nucleic Acids Res.

<304> 7

<306> 30-

<307> 1979

<400> 39

Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Leu Ala Phe Gly Leu Leu
1 5 10 15

Cys Leu Pro Gln Leu Gln Glu Gly Ser Ala Phe Pro Thr

20

25

<210> 40
<211> 27
<212> PRT
<213> Artificial Sequence

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<300>
<303> Nature
<304> 284
<306> 26-
<307> 1980

<400> 40
Met Ala Leu Trp Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu
1 5 10 15
Ala
Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn
20 25

<210> 41
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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<300>
<303> Proc. Natl. Acad. Sci. U.S.A.
<304> 80
<306> 3563-

<400> 41
Met Lys Ala Lys Leu Leu Val Leu Leu Tyr Ala Phe Val Ala Gly Asp
1 5 10 15

Gln Ile

<210> 42
<211> 24
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<400> 42

Met Gly Leu Thr Ser Gln Leu Leu Pro Pro Leu Phe Phe Leu Leu Ala
1 5 10 15

Cys Ala Gly Asn Phe Val His Gly

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<210> 43

<211> 10

<212> PRT

<213> Artificial Sequence

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<220>

<221> UNSURE

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<223> The x at position 3, 4, 5 and 6 represents any
amino acid.

<220>

<223> Description of Artificial Sequence: synthetic

<400> 43

Met Gly Xaa Xaa Xaa Xaa Gly Gly Pro Pro
1 5 10

<210> 44

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<400> 44

Gly Ser Gly Gly Ser

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<210> 45

<211> 4

<212> PRT

<213> Artificial Sequence

<220>
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<400> 45
Gly Gly Gly Ser
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<210> 46
<211> 43
<212> DNA
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<220>
<223> Description of Artificial Sequence: synthetic

<400> 46
gatcgatcc accaccatgg gctcagaacc ggctggggat gtc 43

<210> 47
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

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gatcccaatt taatggttt atttgtcatc gtcatccttg tagtcggct tcctcttgg 60
gaagatcagc cggcgttt 79

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<211> 81
<212> DNA
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<220>
<223> Description of Artificial Sequence: synthetic

<400> 48
gatcccacca ccatggcaa acggcggcag accagcatga cagattcta ccatctccaa 60
acgccccgtg atcttctcca a 81

<210> 49
<211> 80
<212> DNA
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<220>
<223> Description of Artificial Sequence: synthetic

<400> 49
gatcccaatt taaatggttt tatttgtcat cgtcatcctt gtagtcgggc ttccctttgg 60
agaagatcag cggcggttg 80

<210> 50
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<400> 50
atcggatcca ccaccatggg caaacggcg cagaccagcg ccacagctgc ctaccactcc 60

A/
<210> 51
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<400> 51
gatcccaatt taatggttt atttgtcatc gtcatccttg tagtcggct tcctttgg 60
gaagatcagc cggcggttg 79

<210> 52
<211> 365
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<400> 52
Met Gly Ser Ala Thr Ala Ala Thr Val Pro Pro Ala Ala Pro Ala Gly
1 5 10 15

Glu Gly Gly Pro Pro Ala Pro Pro Pro Asn Leu Thr Ser Asn Arg Arg
20 25 30

Leu Gln Gln Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg
35 40 45

Val Asn Val Asp Lys Val Leu Glu Arg Asp Gln Leu Ser Glu Leu Asp
50 55 60

Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser
65 70 75 80

Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Leu Met Met Ile
85 90 95

Ile Leu Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Val Tyr
100 105 110

Phe Ser Thr Gly Ser Gly Ser Gly Ser Gly Ser Gly Pro Val
115 120 125

A/
Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu
130 135 140

Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly
145 150 155 160

Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr
165 170 175

Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu Thr
180 185 190

His Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln His
195 200 205

Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr
210 215 220

Ile Phe Phe Lys Asp Asp Gly Asn Tyr Thr Arg Ala Glu Val Lys Phe
225 230 235 240

Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe
245 250 255

Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Phe Asn
260 265 270

Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys
275 280 285

Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu
290 295 300

Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu
305 310 315 320

Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser Lys Asp
325 330 335

Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala
340 345 350

Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys Glx
355 360 365

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<210> 53

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<400> 53

Gly Ser Gly Ser Ile Glu Gly Arg Leu Arg Lys Gln Gly Ser Cys Ser
1 5 10 15

<210> 54

<211> 477

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<400> 54

Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
1 5 10 15

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
20 25 30

Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
35 40 45

Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
50 55 60

Leu Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys

65

70

75

80

Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
85 90 95

Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
100 105 110

Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Gly Ile
115 120 125

Asp Phe Lys Glu Asp Gly Met Ile Leu Gly His Lys Leu Glu Tyr Asn
130 135 140

Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
145 150 155 160

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
165 170 175

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
180 185 190

Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
195 200 205

Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
210 215 220

Thr Ala Ala Gly Ser Gly Ser Ile Glu Gly Arg Leu Arg Lys Gln Gly
225 230 235 240

Ser Gly Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
245 250 255

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
260 265 270

Glu Gly Glu Gly Asp Ala Thr Gly Lys Leu Thr Leu Lys Phe Ile Cys
275 280 285

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu
290 295 300

Thr His Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
305 310 315 320

His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg

325 330 335

Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val
340 345 350

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
355 360 365

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
370 375 380

Phe Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile
385 390 395 400

Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln
405 410 415

Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val
420 425 430

Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser Lys
435 440 445

Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Val Thr Ala
450 455 460

Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys Glx
465 470 475

<210> 55
<211> 607
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<400> 55
Gly Ser Ala Thr Ala Ala Thr Val Pro Pro Ala Ala Pro Ala Gly Glu
1 5 10 15

Gly Gly Pro Pro Ala Pro Pro Pro Asn Leu Thr Ser Asn Arg Arg Leu
20 25 30

Gln Gln Thr Gln Ala Gln Val Glu Asp Glu Val Val Asp Ile Met Arg
35 40 45

Val Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu
50 55 60

Asp Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr
65 70 75 80

Ser Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Leu Lys Met
85 90 95

Met Ile Leu Leu Gly Val Ile Cys Ala Ile Ile Leu Val Ile Ile Ile
100 105 110

Val Tyr Phe Ser Thr Gly Ser Gly Ser Gly Ser Gly Ser Gly
115 120 125

Pro Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
130 135 140

A/

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
145 150 155 160

Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
165 170 175

Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
180 185 190

Leu Thr His Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys
195 200 205

Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
210 215 220

Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
225 230 235 240

Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly
245 250 255

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
260 265 270

Asn Phe Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn
275 280 285

Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser
290 295 300

Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly
305 310 315 320

Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu
325 330 335

Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe
340 345 350

Val Thr Ala Ala Gly Ser Gly Ser Ile Glu Gly Arg Arg Lys Leu Gln
355 360 365

Gly Ser Gly Ser Lys Gly Glu Glu Leu Thr Phe Gly Val Val Pro Ile
370 375 380

Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser
385 390 395 400

Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Ile
405 410 415

Phe Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr
420 425 430

Thr Leu Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met
435 440 445

Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln
450 455 460

Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala
465 470 475 480

Glu Val Lys Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly
485 490 495

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
500 505 510

Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn
515 520 525

Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser
530 535 540

Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly
545 550 555 560

Pro Val Leu Leu Pro Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
565 570 575

Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
580 585 590

Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys Glx
595 600 605

<210> 56

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<400> 56

Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
1 5 10 15

Val Thr Asn Ser

20

<210> 57

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

<400> 57

Lys Arg Arg Gln Thr Ser Ala Thr Ala Ala Tyr His Ser Arg Arg Leu
1 5 10 15

Ile Phe Ser Lys Arg Lys Pro

20